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ABSTRACT

Many studies have examined group pressure and its effect on an individual. A study was undertaken to investigate the influence of a majority upon subjects and its effect upon long term memory. Undergraduate students (N=18) were selected and randomly assigned to either a treatment or control group. Each subject watched a 10-minute segment from a movie and then answered questions about the movie segment. Treatment subjects were questioned orally with three confederate subjects who responded to the questions before the subject responded and who lied on 8 out of 20 questions. Control subjects answered the same questions in a written questionnaire. Each subject returned in one week to answer the standard written questionnaire. The results indicated that treatment subjects' performance was much poorer than that of control subjects during the initial session. Their performance improved in the recall testing session but remained poorer than that of the control subjects. (Author/NB)

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Effect of Group Pressure on Memory Reconstruction

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Abstract

This study concerns the influence of a majority upon subjects and its effect upon long term memory. Eighteen undergraduate introductory psychology students were selected and randomly placed in either the treatment or control group. Each subject watched a ten minute snippit of a movie. Treatment subjects were questioned orally with three confederate subjects who lied on eight out of twenty questions. Control subjects answered the same written questionnaire. Each subject returned in one week to answer the standard written questionnaire. Treatment subjects' performance was much poorer than that of control subjects during the initial session. Their performance improved in the recall testing session but remained poorer than that of the control subjects.

Effect of Group Pressure on Memory Reconstruction

Many studies have evolved concerning group pressure and its effect on an individual. In 1951, Asch performed a study in which the subject was confronted with a confederate majority on a simple task of matching lengths of line segments using flash cards. For some trials, the confederates, who answered before the subject, all answered a unanimous and incorrect answer. The subject would be forced to either compromise, conform, or stand against the group in answering. Asch noted also that suspicion was rare as the subject was quickly confronted with the pressure. This study suggested that variation of an individual's reaction, whether to submit to group pressure or to stand against group pressure, is a result of different psychological conditions. For example, those who stand may be of a different personality type or may be more extraverted than the conformists. This same study did show that when the majority error becomes more extreme, the

"compromise" error is more frequent. Also, as one would expect, the majority has more of an effect when the subject is in doubt of the answer (Asch, 1951). Asch performed many variations of this same study and found a majority of three to be as significant as a majority of four, eight, or sixteen. Other versions put two subjects in with six confederates so that a "true partner" effect was possible. Another gave the subject a confederate "true partner" who later conformed to the group; while yet another gave a late confederate "true partner." Finally, another version introduced a confederate "compromise partner" who would compromise between the extreme incorrect answer and the correct answer. In the first two "true partner" cases, minimal support of one other person was enough for a subject to stand apart from the majority. In the late "true partner" variation, if the subject conformed to the majority in the first part, he generally would not change after the late true partner split from the incorrect majority. Asch suggests that the subject did not change in the middle of the test period because that would show the subject's inconsistency. The compromise partner variation showed more moderate errors but no significant independence.

Further research by Asch (1940) shows the subject following the congenial or friendly majority more times than the antagonistic majority. The same subject would be reinforced if in agreement with the congenial group, and would make a greater compromise toward an extreme error by that favorable majority. Similarly (Asch, 1948 & Moore, 1921), a subject's judgments will be influenced more by an authoritative person toward that authoritative viewpoint. However, as a particular subject's knowledge of a matter increases, his attitude becomes more stable and is less likely to be influenced.

Along with favorable groups, unfavorable groups, and authoritative pressures, people can be influenced by misleading questions. An example (Loftus & Zanni, 1975) would be a change in the article in the following question:

Did you see a broken headlight?

Did you see the broken headlight?

When "the" is used, a memory reconstruction of an eyewitness account may occur in order to include the broken headlight. Subjects were found to remember broken glass more if introduced to the latter of the two questions. Other studies concluded that misleading questions (Weinberg, Wadsworth, & Baron, 1983) and misleading information (Loftus, Miller & Burns, 1978) also interfere with accuracy of eyewitnesses. Another study (Loftus & Palmer, 1974) showed that the wording of a question will influence a person. For a two car collision, questions containing "smashed" were more likely to receive higher speed estimates than questions containing "hit" or "bumped". One week later, subjects were found to remember broken glass if introduced to the question containing "smashed." These words, therefore, also diminish overall accuracy of an eyewitness account and cause memory alteration of that particular scene. Loftus (1975) also showed that questions asked immediately after an event can introduce new (not necessarily correct) information which will change the memory.

This study combined group pressure with reconstructing memory. In Asch's 1951 line segment study, he used majority against an individual where the individual could see the error of the majority. That is, the subject could visually see that the confederates were wrong. This study matched a majority against an individual's memory of a film scene to which he/she had just previously been exposed. The subject would, therefore, be relying on his memory for the correct answers. As the majority gave some wrong answers, the treatment subject either conformed to the influence of group pressure or stood against the majority. The hypothesis was as follows:

> The treatment subject will reconstruct his memory of the movie scene to account for the differences created by the confederate majority.

The second test one week later should show the memory reconstruction resulting from the influence of the majority.

Method

Subjects

Subjects consisted of eighteen undergraduates enrolled in the introductory psychology course at Lamar University. They volunteered for the experiment and received credit toward this course for their participation. No subject had seen the movie previously.

Apparatus

The first ten minutes of the 1943 movie "Ghost on the Loose" was shown on a video cassette recorder. Afterwards subjects answered the questionnaire in Appendix A.

Procedure

When the subject arrived, he/she was given this summary:

This experiment is a study in memory. At any time during the study, if you wish to leave, you may do so. You will review scenes in a movie for ten minutes and then you will take a memory questionnaire. Then, in a weeks' time, you will be asked to return for a follow-up written memory questionnaire.

Confederates went through the introductory procedure along with the subjects. The three confederates also viewed the film clip with the subjects. Immediately after the clip, the oral questioning session began.

The questionnaire consists of fifteen four-choice multiple choice questions and five two-choice (true/false) questions. Answers were equally distributed among the four choices and two choices respectively. The questions were arranged in chronological order to aid in memory. There were six four-choice questions and two two-choice questions answered incorrectly by the confederate majority. All questions were concrete questions (none involved opinions). "Incorrect" majority answers were also randomly chosen and were randomly distributed among the questions (see Appendix B).

The three confederates and the subject were asked to please answer all questions and answer them as accurately as possible giving the answer and not the letter corresponding to the answer. Each question was read twice. The experimenter explained that there would be a reasonable time limit (one minute after the second reading for the treatment group and thirty minutes for the entire test for the control group), and asked that each be answered as promptly as possible.

Subjects were randomly assigned to treatment and control groups. Nine subjects were in each group. The control group merely answered written questionnaires with no confederates present and were thanked and asked to return in one week.

The treatment subject was seated such that he had to answer after the three confederates answered. The confederates were always the same three experimenters. During the session, the experimenter recorded all answers given by all confederates and the subject. After the session, the subject was thanked (along with the confederates), was asked not to discuss the experiment with anyone between questioning sessions, and was asked to return one week later. On their return visit, all subjects receive a written questionnaire with the same questions. Subjects were again thanked and immediately were debriefed with explanations of the experiment and reasons why he/she was placed in that experimental situation.

Results

The data were analyzed with a split-plot design. The between subject independent variable was the randomly assigned treatment or control groups, that is, whether or not the subject received the majority response of the confederates. The within subject independent variable was the trial number (trial 1 and retest). The dependent variable was the number of errors on the eight critical questions.

The interaction between treatments and trials was significant, F (1, 16) = 6.32, $p < .05$. The treatment main effect closely approached significance.

Insert Table 1 about here

The graph of group means shows the interaction effect.

Insert Figure 1 about here

Discussion

From these results, it seems clear that treatment subjects were initially influenced by the confederate majority responses. Over time and without the presence of the confederates, this effect appears to have partially but not completely dissipated. The significant effect supports the hypothesis that states that the treatment subjects would reconstruct their memories of the movie scene to account for the differences created by the confederate majority's influence.

This study showed that group pressure does affect memory reconstruction in a situation where the subject cannot independently verify the errors the majority makes. Asch (1951) showed that a social influence occurred for pictures that the subjects could see at the time of questioning. In this study, the subject was forced to rely on his/her memory to answer the questions. Both studies show that social influence was effective in altering the

initial response of the treatment group. However, this study goes further in demonstrating that the actual memory of the subject was influenced by the confederates. It would be difficult to maintain that on trial 2 a week later and with no confederates present, the experimental subjects knew the correct answer but continued making errors entirely due to fear of the disapproval of the confederate majority. It appears more likely that their memory of the events were truly altered at least to some extent by the response of the confederate majority.

Further research might compare a subject's tendency to conform to the majority with that subject's confidence level or personality type. In fact, several treatment subjects commented on their feeling of relief during debriefing when they were informed of the confederate majority intentionally introducing errors. Many admitted to feeling foolish when they did stand against the majority in response to a question. This suggests that people with lower confidence levels may have a more difficult time standing against the majority. It is of particular interest to determine whether such people will show an improved recall when majority is not present.

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Table 1

Split-Plot analysis of Variance Source Table

Source	df	SS	MS	F	P
Treatment	1	23.36	23.36	4.35	NS
Trials	1	0.694	0.694	3.23	NS
Interaction	1	1.36	1.36	6.32	.05
Between error	16	85.89	5.37	----	---
Within error	16	3.44	0.215	----	---
Total	35	114.75	-----	----	---

Note: critical F .05 = 4.49, for df = 1,16

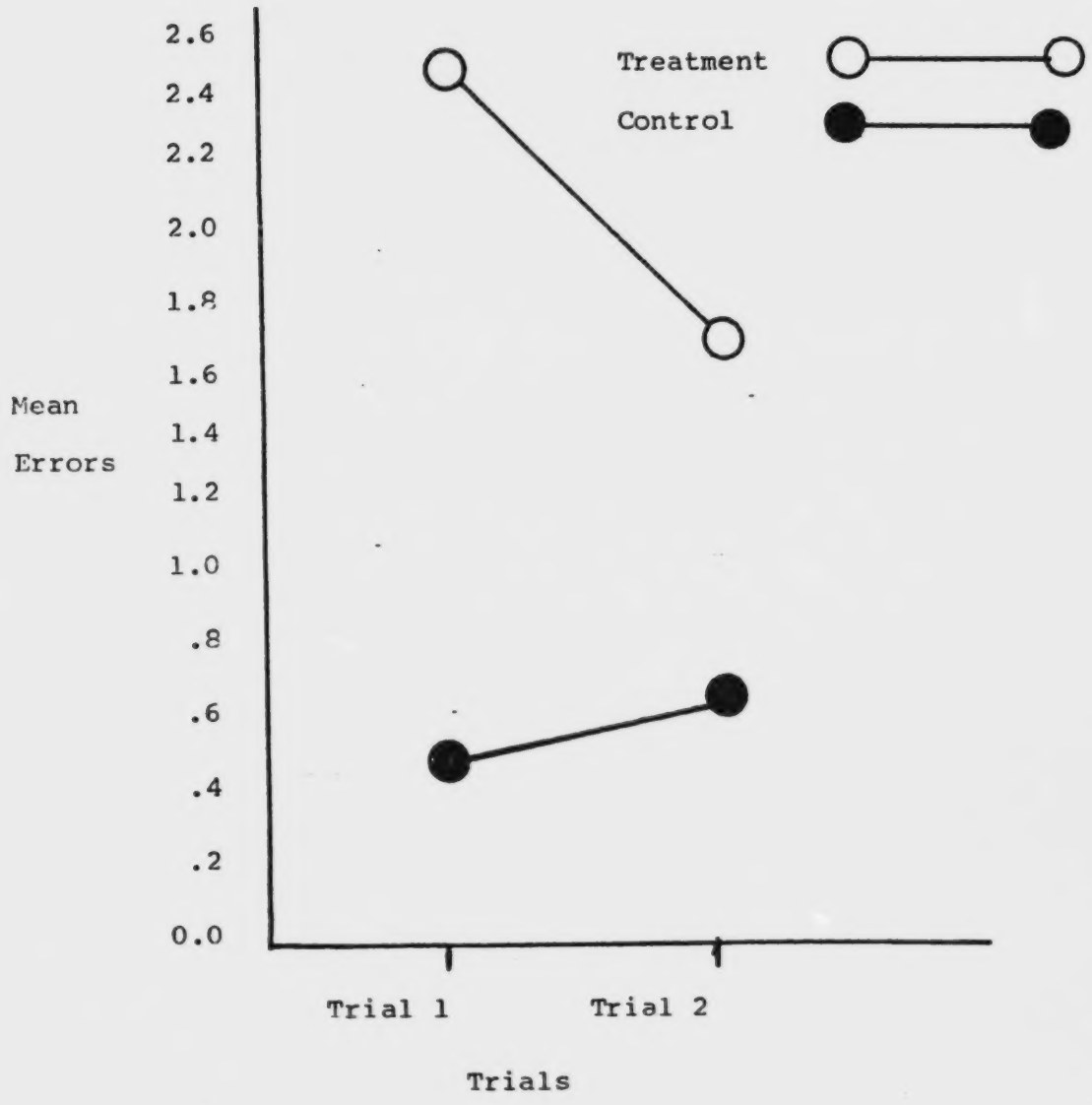

Figure 1 Trials X Treatments Interaction Effect

Appendix A

Please answer all questions as accurately as possible. Answer all questions. Questions are in chronological order as seen in "Ghost on the Loose". You will have thirty minutes to complete this questonnaire.

___1. How does the first scene open? a) men singing b) a woman brings in a veil c) the bride is getting dressed d) the best man buys a cake

___2. How many guys are rehearsing? a) more than 15 b) between 10 & 15 c) between 5 & 10 d) less than 5

___3. The guys in the living room are singing. True/ False

___4. The bride's mother hands what to the bride? a) veil b) a bouquet c) a garter d) something borrowed

___5. The bride's mother cries. True/False.

___6. What does the groom walk into the living room wearing? a) a tuxedo b) a suit with a tie c) work clothes d) a suit with no tie

___7. What does the groom, Mr. Gibson, give to Glimpy, the best man? a) a letter b) money c) a drink d) a ring

___8. What is the groom's occupation? a) a banker

b) a barber c) an airplane engineer d) a gangster

___9. What is Dave, the piano player, doing while everyone is talking? a) eating b) smoking c) sleeping d) dancing

__10. The groom talks with the landlord behind the apartment buidling. True/False

__11. What is the rumor about the house? a) it is haunted b) it has bad plumbing c) it needs work d) it is very expensive

__12. Where do Rocky and Danny get the tuxedo for Glimpy? a) Danny's father b) a friend c) a formalwear store d) a mortuary

__13. Mugs and Glimpy go talk to whom? a) a gangster b) a police lieutenant c) the bride d) a preacher

__14. The wedding is held in a park. True/False

__15. What item of clothing does Glimpy struggle to put on? a) a tie b) a collar c) cuff links d) a jacket

__16. How many guys help the best man, Glimpy, get dressed? a) 3 b) 4 c) 5 d) 6

__17. What was written on the flowers? a) Rest in Peace b) It's a Girl! c) Best Wishes d) Good Luck

__18. The guys decide to keep the wreath for the wedding. True/False

__19. What is the last item of clothing to go on Glimpy?

a) his jacket b) his cuff links c) his hat

d) his tie

__20. Why is Glimpy hesitant to wear the tuxedo?

a) it came from a haunted house b) the pants are too long c) it belongs to a dead gangster d) the pants are too short

Appendix B

Question number	Correct response	Majority response
1	b	b
2	c	d*
3	T	T
4	a	a
5	T	T
6	b	b
7	d	d
8	c	a*
9	c	a*
10	F	T*
11	a	a
12	d	b*
13	b	d*
14	F	F
15	b	b
16	a	a
17	a	a
18	T	F*
19	d	d
20	c	b*

*Incorrectly answered by the confederate majority.